Online Interview with Ondrej Maly, former member of the council of the Czech Telecommunications Office (the national regulator for the Czech Republic)

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We have some 10.5 million people, 79 thousand sqkm (slightly smaller than South Carolina, as CIA Factbook is kind to remind us) and over 6000 municipalities. However, out of these, 4800 have less than 1000 inhabitants and 1,78 million people out of the 10,5 million live in these 4800 villages. Fixed broadband coverage is thus quite a challenge especially in regions with a lot of smaller villages (Central Bohemia, Highlands etc.).

This is the reason why CZ is the country with most FWA (wi-fi) broadband per capita in EU. Over 1/3 of all broadband connections are served by wi-fi providers, usually in 5 GHz unlicensed band. It is cheap to deploy and it spawned a whole ecosystem (including wireless infrastructure companies such as Alcoma or VanCo).

Key to this deployment is not access, but backhaul. And there is something I think FCC should try to do. CZ is one of two countries in EU that has unlicensed band in 10 GHz that is ideal for backhauling these local networks. Again there are companies offering PtP connections in 10 GHz unlicensed that are cheap and easy to deploy on chimneys, churches etc.

Usually it works like this - access is realized by 5 GHz P-MP in the village, it is covered by a few access points. End User has a receiver (looks like this: files.i4wifi.cz/inc/_doc/attac…) which routes the signal to your standard issue home wi-fi router. The solution is dirt cheap. If the local WISP knows what they are doing, interference is not a big issue, because the equipment is now capable of mitigating even the most adverse conditions. The primary issue is in my opinion backhaul. There is no chance fiber will be in these small rural communities any time soon, so the only option is wireless.

If you free the spectrum for backhaul, the possibilities are then endless. In CZ local wi-fi providers are big competition for xDSL (usually, now xDSL is the "internet of the last resort" pretty much anywhere - it is quite reliable, but slow and expensive). This is my opnion - if you want the rural communities give at least some decent broadband connection (by decent I mean around 30 Mbps per user), you have to think about backhaul first.

One more thing perhaps - the local and regional telcos have evolved over time. Many of them began as pure wireless ISPs and now build FTTH/B connections. We register some 400 thousand FTTH/B active accesses (= takeup), so the coverage may be x3 - 1,2 million (out of 4,4 million households).

10 GHz is used more and more for B2B applications as a replacement of fiber, especially if the business customer is quite far away from fiber node.

But overall I think that abundance of unlicensed spectrum is good for competition and for rural communities because it allows to cover a large area with lower costs and makes business case for WISPs far easier.

I don't know the current situation in US but what also helps is lower administration fees, infrastructure sharing and some regulation of the rights of way fees, easements and servitudes and other possible fees that make the actual building of the network more expensive. Sharing of passive infrastructure = access to ducts, poles etc. of incumbent or other infrastructure companies such as road and train track operators, sewers, energy companies) also helps a lot. EU even has a directive for this (2014/61/EU)